INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

MINOR SOURCE OPERATING PERMIT
OFFICE OF AIR QUALITY
and Gary Department of Environmental Affairs

North American Refractories Company
76 North Bridge Street
Gary, Indiana 46406

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-5.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 089-12579-00163	
Issued by: ORIGINAL SIGNED BY Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: November 5, 2003 Expiration Date: November 5, 2008

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) and Gary Department of Environmental Affairs. The information describing the source contained in Conditions A.1 through A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary refractory material manufacturing, repair and installation source.

Authorized Individual:	Vice President, Legal and Administrative
Source Address:	76 North Bridge Street, Gary, Indiana 46406
Mailing Address:	76 North Bridge Street, Gary, Indiana 46406
General Source Phone:	219-883-3335
SIC Code:	3297
County Location:	Lake
Source Location Status:	Nonattainment area for Ozone, PM_{10} and SO_2 Attainment area for all other criteria pollutants
Source Status:	Minor Source Operating Permit Minor Source, under PSD or Emission Offset Rules; Minor Source, Section 112 of the Clean Air Act

A.2 Emissions Units and Pollution Control Equipment Summary

This stationary source is approved to construct and operate the following emissions units and pollution control devices:

(a) One (1) natural gas-fired dry out assembly, known as two (2) degasser units, rated at 0.957 million British thermal units per hour, total.

(b) Steel fabrication and repair operations, consisting of stick welding, capacity: 7.21 pounds of welding rods/wire per hour.

(c) One (1) Safety Kleen cold cleaner degreaser, identified as Parts Washer, capacity: 20 gallons.

(d) One (1) storage tank, storing diesel fuel, capacity: 550 gallons.

(e) One (1) refractory brick sawing operation, with a maximum annual throughput of 65 tons of brick per year.

(f) Three (3) mixers, used to mix refractory castables, mortars and ramming mixes, consisting of:

(1) One (1) large mixer, capacity: 2000 pounds per batch and 42 tons per year.

(2) One (1) small paddle mixer, capacity: 165 pounds per batch and 21 tons per year.

(3) One (1) small paddle mixer, capacity: 110 pounds per batch and 21 tons per year.

(g) Three (3) natural gas-fired combustion units, identified as Dryout Units #1, #2 and #3, rated at 12.0 million British thermal units per hour, each.

(h) One (1) natural gas-fired combustion unit, identified as Dryout Unit #5, rated at 6.0 million British thermal units per hour.

(i) One (1) natural gas-fired furnace, identified as Stress Relief Furnace #6, rated at 12.0 million British thermal units per hour.

(j) Three (3) natural gas-fired space heaters, identified as Spaceheaters #8, #9 and #10, rated at 2.5 million British thermal units per hour, each.

(k) One (1) mixing operation, identified as #19, used to make castable refractory material for use in lining of steel ladles, consisting of three (3) mixers, capacity: 4,000 pounds per batch, each, and with a total maximum annual castable throughput of 20,000 tons per year.

(l) One (1) mixer, identified as #22, used to make castable refractory material for casting of custom shapes, capacity: 4,000 pounds per batch, and a maximum annual castable throughput of 6,240 tons per year.

(m) One (1) refractory brick grinder, equipped with a cartridge dust collector for particulate control, exhausting to stack S05, capacity: 1,200 pounds of brick per hour.

SECTION B GENERAL CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

B.1 Permit No Defense [IC 13]

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 Permit Term and Renewal [326 IAC 2-6.1-7(a)] [326 IAC 2-1.1-9.5]

This permit is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions of this permit do not affect the expiration date.

The Permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date. If a timely and sufficient permit application for a renewal has been made, this permit shall not expire and all terms and conditions shall continue in effect until the renewal permit has been issued or denied.

B.5 Modification to Permit [326 IAC 2]

Notwithstanding the Section B condition entitled “Minor Source Operating Permit”, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.6 Minor Source Operating Permit [326 IAC 2-6.1]

This document shall also become a minor source operating permit pursuant to 326 IAC 2-6.1 when, prior to start of operation, the following requirements are met:

(a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section.

(1) If the Affidavit of Construction verifies that the facilities covered in this Construction Permit were constructed as proposed in the application, then the facilities may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.

(2) If actual construction of the emission units differs from the construction proposed in the application, the source may not begin operation until the permit has been revised pursuant to 326 IAC 2-6.1-6 and an Operation Permit Validation Letter is issued.

(b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions

associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

(c) Upon receipt of the Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section, the Permittee shall attach it to this document.

(d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1.1-7(Fees).

B.7 Annual Notification [326 IAC 2-6.1-5(a)(5)]

(a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.

(b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.

(c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

and

Gary Department of Environmental Affairs
Suite 1012
504 North Broadway
Gary, Indiana 46402

(d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, and Gary Department of Environmental Affairs on or before the date it is due.

B.8 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each emissions unit:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Department of Environmental Affairs
Suite 1012
504 North Broadway
Gary, Indiana 46402

The PMP extension notification does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) The Permittee shall implement the PMPs, including any required record keeping, as necessary to ensure that failure to implement a PMP does not cause or contribute to an exceedance of any limitation on emissions or potential to emit.

(c) A copy of the PMP's shall be submitted to IDEM, OAQ, and Gary Department of Environmental Affairs upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ, and Gary Department of Environmental Affairs. IDEM, OAQ, and Gary Department of Environmental Affairs may require the Permittee to revise its PMP whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMP does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation, Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.9 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

(a) Permit revisions are governed by the requirements of 326 IAC 2-6.1-6.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Department of Environmental Affairs
Suite 1012

504 North Broadway
Gary, Indiana 46402

Any such application shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1.

(c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

(d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

B.10 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)] [IC 13-14-2-2] [IC 13-20-3-1] [IC 13-17-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, Gary Department of Environmental Affairs, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a permitted source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under this title or the conditions of this permit or any operating permit revisions;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.11 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)]:

(a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch and Gary Department of Environmental Affairs, within thirty (30) days of the change.

(b) The written notification shall be sufficient to transfer the permit to the new owner by an notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).

(c) IDEM, OAQ, and Gary Department of Environmental Affairs shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the

"authorized individual" as defined by 326 IAC 2-1.1-1.

B.12 Annual Fee Payment [326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing.

(b) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, I/M & Billing Section), to determine the appropriate permit fee.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

C.1 Particulate Emission Limitation For Processes with Process Weight Rates Less Than One Hundred (100) pounds per hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Permit Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

(a) Violation of any conditions of this permit.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.

(d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

(e) For any cause which establishes in the judgment of IDEM and Gary Department of Environmental Affairs, the fact that continuance of this permit is not consistent with purposes of this article.

C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.4 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

C.5 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260

linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Department of Environmental Affairs
Suite 1012
504 North Broadway
Gary, Indiana 46402

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by an “authorized individual” as defined by 326 IAC 2-7-1(34).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and renovation

The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Accredited Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

Testing Requirements

C.6 Performance Testing [326 IAC 3-6]

(a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Department of Environmental Affairs
Suite 1012
504 North Broadway
Gary, Indiana 46402

no later than thirty-five (35) days prior to the intended test date.

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14 days) prior to the actual date.

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ and Gary Department of Environmental Affairs not later than forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, and Gary Department of Environmental Affairs, if the source submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.7 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U.S. EPA.

Compliance Monitoring Requirements

C.8 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and recordkeeping requirements not already legally required shall be implemented when operation begins.

C.9 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60, Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.10 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11]

(a) Whenever a condition in this permit requires the measurement of total static pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent (±2%) of full scale reading.

(b) Whenever a condition in this permit requires the measurement of a temperature or flow rate, the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent (±2%) of full scale reading.

(c) The Preventive Maintenance Plan for the pH meter shall include calibration using known standards. The frequency of calibration shall be adjusted such that the typical error found at calibration is less than one pH point.

(d) The Permittee may request the IDEM, OAQ approve the use of a pressure gauge or other instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other parameters.

C.11 Compliance Response Plan - Preparation and Implementation

(a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. A CRP shall be submitted to IDEM, OAQ and Gary Department of Environmental Affairs upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:

(1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.

(2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan, the Permittee shall amend its Compliance Response Plan to include such response steps taken.

(b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:

(1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan; or

(2) If none of the reasonable response steps listed in the Compliance Response Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.

(3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, and it will be 10 days or more until the unit or device will be shut down, then the permittee shall promptly notify the IDEM, OAQ of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.

(4) Failure to take reasonable response steps shall be considered a deviation from the permit.

(c) The Permittee is not required to take any further response steps for any of the following reasons:

(1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.

(2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.

(3) An automatic measurement was taken when the process was not operating.

(4) The process has already returned or is returning to operating within “normal” parameters and no response steps are required.

(d) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

C.12 Actions Related to Noncompliance Demonstrated by a Stack Test

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected emissions unit while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1.

Record Keeping and Reporting Requirements

C.13 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.

(b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.14 Emission Statement [326 IAC 2-6]

(a) The Permittee shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall meet the following requirements:

(1) Indicate estimated actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);

(2) Indicate estimated actual emissions of regulated pollutants (as defined by 326 IAC 2-7-1(32) “Regulated pollutant which is used only for purposes of Section 19 of this rule”) from the source, for purposes of Part 70 fee assessment.

(b) The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 30. The annual emission statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Department of Environmental Affairs
Suite 1012
504 North Broadway
Gary, Indiana 46402

(c) The annual emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other

means, it shall be considered timely if received by IDEM, OAQ, and Gary Department of Environmental Affairs on or before the date it is due.

The submittal by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

C.15 General Record Keeping Requirements [326 IAC 2-6.1-5]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner or Gary Department of Environmental Affairs makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner or Gary Department of Environmental Affairs within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented when operation begins.

C.16 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) Reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Gary Department of Environmental Affairs
Suite 1012
504 North Broadway
Gary, Indiana 46402

(b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, and Gary Department of Environmental Affairs on or before the date it is due.

(c) Unless otherwise specified in this permit, any quarterly report required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. The reports do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description:

(a) One (1) natural gas-fired dry out assembly, known as two (2) degasser units, rated at 0.957 million British thermal units per hour, total.

(b) Steel fabrication and repair operations, consisting of stick welding, capacity: 7.21 pounds of welding rods/wire per hour.

(c) One (1) Safety Kleen cold cleaner degreaser, identified as Parts Washer, capacity: 20 gallons.

(d) One (1) storage tank, storing diesel fuel, capacity: 550 gallons.

(e) One (1) refractory brick sawing operation, with a maximum annual throughput of 65 tons of brick per year.

(f) Three (3) mixers, used to mix refractory castables, mortars and ramming mixes, consisting of:

(1) One (1) large mixer, capacity: 2000 pounds per batch and 42 tons per year.

(2) One (1) small paddle mixer, capacity: 165 pounds per batch and 21 tons per year.

(3) One (1) small paddle mixer, capacity: 110 pounds per batch and 21 tons per year.

(g) Three (3) natural gas-fired combustion units, identified as Dryout Units #1, #2 and #3, rated at 12.0 million British thermal units per hour, each.

(h) One (1) natural gas-fired combustion unit, identified as Dryout Unit #5, rated at 6.0 million British thermal units per hour.

(i) One (1) natural gas-fired furnace, identified as Stress Relief Furnace #6, rated at 12.0 million British thermal units per hour.

(j) Three (3) natural gas-fired space heaters, identified as Spaceheaters #8, #9 and #10, rated at 2.5 million British thermal units per hour, each.

(k) One (1) mixing operation, identified as #19, used to make castable refractory material for use in lining of steel ladles, consisting of three (3) mixers, capacity: 4,000 pounds per batch, each, and with a total maximum annual castable throughput of 20,000 tons per year.

(l) One (1) mixer, identified as #22, used to make castable refractory material for casting of custom shapes, capacity: 4,000 pounds per batch, and a maximum annual castable throughput of 6,240 tons per year.

(m) One (1) refractory brick grinder, equipped with a cartridge dust collector for particulate control, exhausting to stack S05, capacity: 1,200 pounds of brick per hour.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.1.1 Particulate [326 IAC 6-3-2(d)]

(a) Pursuant to 326 IAC 6-3-2(e), the particulate emissions from the three (3) mixers (EU #19), and the one (1) mixer (EU #22) shall be limited to 25.2 pounds per hour, each, when operating

at a process weight rate of 15.0 tons per hour, each.

(b) Pursuant to 326 IAC 6-3-2(e), the particulate emissions from the three (3) mixers, used to mix refractory castables, mortars and ramming mixes shall be limited to the following:

(1) The one (1) large mixer shall be limited to 13.6 pounds per hour when operating at a process weight rate of 6.0 tons per hour.

(2) The one (1) small paddle mixer, with a capacity of 165 pounds per batch, shall be limited to 4.07 pounds per hour when operating at a process weight rate of 0.99 tons per hour

(3) The one (1) small paddle mixer, with a capacity of 110 pounds per batch, shall be limited to 1.95 pounds per hour when operating at a process weight rate of 0.33 tons per hour.

(c) Pursuant to 326 IAC 6-3-2(e), the particulate emissions from the refractory brick grinder shall be limited to 2.91 pounds per hour when operating at a process weight rate of 1,200 pounds per hour.

(d) The above pound per hour particulate limitations were calculated by use of the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

D.1.2 Volatile Organic Compounds (VOC) [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for the one (1) degreaser, identified as Parts Washer, constructed after January 1, 1980, the Permittee shall:

(a) Equip the cleaner with a cover;

(b) Equip the cleaner with a facility for draining cleaned parts;

(c) Close the degreaser cover whenever parts are not being handled in the cleaner;

(d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(e) Provide a permanent, conspicuous label summarizing the operation requirements;

(f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

D.1.3 Volatile Organic Compounds (VOC) [326 IAC 8-3-5]

(a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), for cold cleaner degreaser operations without remote solvent reservoirs existing as of July 1, 1990, located in Clark, Elkhart, Floyd, Lake, Marion, Porter or St. Joseph Counties, the Permittee shall ensure that the following requirements are met:

(1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:

(A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38EC) (one hundred degrees Fahrenheit (100EF));

(B) The solvent is agitated; or

(C) The solvent is heated.

(2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38EC) (one hundred degrees Fahrenheit (100EF)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

(3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).

(4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.

(5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38EC) (one hundred degrees Fahrenheit (100EF)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9EC) (one hundred twenty degrees Fahrenheit (120EF)):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.

(B) A water cover when solvent is used is insoluble in, and heavier than, water.

(C) Other systems of demonstrated equivalent control such as a refrigerated chiller of carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.

(b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaning facility construction of which commenced after July 1, 1990, shall ensure that the following operating requirements are met:

(1) Close the cover whenever articles are not being handled in the degreaser.

(2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.

(3) Store waste solvent only in covered containers and prohibit the disposal or transfer

of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

D.1.4 Volatile Organic Compounds (VOC) [326 IAC 8-3-8]

Pursuant to 326 IAC 8-3-8 (Material Requirements for Cold Cleaning Degreasers), for the one (1) cold cleaner degreaser, identified as Parts Washer, located in Lake County, the Permittee shall not operate the cold cleaning degreaser with a solvent vapor pressure that exceeds one (1) millimeter of mercury (nineteen-thousandths (0.019) pound per square inch) measured at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

D.1.5 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the three (3) mixers at EU #19, the one (1) mixer at EU #22, and the one (1) large mixer, and any control devices.

Compliance Determination Requirements

D.1.6 Particulate Control

In order to comply with Condition D.1.1(c), the cartridge dust collector for particulate control shall be in operation and control emissions from the refractory brick grinder at all times that the refractory brick grinder is in operation.

Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.1.7 Visible Emissions Notations

(a) Visible emission notations of the refractory brick grinder cartridge dust collector stack exhaust (S05) shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation and Implementation shall be considered a violation of this permit.

D.1.8 Parametric Monitoring

The Permittee shall record the total static pressure drop across refractory brick grinder cartridge dust collector, at least once per shift when the refractory brick grinder is in operation when venting to the atmosphere. When for any one reading, the pressure drop across the cartridge dust collector is outside the normal range of 2.0 and 8.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation and Implementation. A pressure reading that is outside the above

mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation and Implementation shall be considered a violation of this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.1.9 Dust Collector Inspections

An inspection shall be performed each calendar quarter of all cartridges controlling the refractory brick grinding process. Inspections required by this condition shall not be performed in consecutive months. All defective cartridges shall be replaced.

D.1.10 Broken or Failed Cartridge Detection

In the event that cartridge failure has been observed:

(a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section B- Emergency Provisions). Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation and Implementation, shall be considered a violation of this permit.

(b) For single compartment dust collectors, if failure is indicated by a significant drop in the dust collector's pressure readings with abnormal visible emissions or the failure is indicated by an opacity violation, or if cartridge failure is determined by other means, such as gas temperatures, flow rates, air infiltration, leaks, dust traces or triboflows, then failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.1.11 Record Keeping Requirements

(a) To document compliance with Condition D.1.7, the Permittee shall maintain records of visible emission notations of the refractory brick grinder cartridge dust collector stack exhaust once per shift.

(b) To document compliance with Condition D.1.8, the Permittee shall maintain once per shift records of the total static pressure drop during normal operation.

(c) To document compliance with Condition D.1.9, the Permittee shall maintain records of the results of the inspections required under Condition D.1.9.

(d) To document compliance with Condition D.1.5, the Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan.

(e) To document compliance with Condition D.1.4, the Permittee shall maintain each of the following records for each purchase:

(1) The name and address of the solvent supplier.

(2) The date of purchase.

(3) The type of solvent.

(4) The volume of each unit of solvent.

(5) The total volume of the solvent.

(6) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

(f) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
FAX NUMBER - 317 233-5967

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES ?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100 TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: _____ PHONE NO. :_____
LOCATION: (CITY AND COUNTY) _____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____
_____

DATE/TIME MALFUNCTION STARTED: _____/_____/ 20____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE_____/_____/ 20____ _____ AM / PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

_____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

_____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____
INTERIM CONTROL MEASURES: (IF APPLICABLE) _____
_____
_____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

*** Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

_____

_____

PAGE 2 OF 2

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH
Gary Department of Environmental Affairs

MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	**North American Refractories Company**
Address:	**76 North Bridge Street**
City:	**Gary**
Phone #:	**219-883-3335**
MSOP #:	**089-12579-00163**

I hereby certify that North American Refractories Company is
- **9** still in operation.
- **9** no longer in operation.

I hereby certify that North American Refractories Company is
- **9** in compliance with the requirements of MSOP **089-12579-00163**.
- **9** not in compliance with the requirements of MSOP **089-12579-00163**.

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

Mail to: Permit Administration & Development Section
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

North American Refractories Company
76 North Bridge Street
Gary, Indiana 46406

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for _____.
(Title) (Company Name)

3. By virtue of my position with _____ , I have personal knowledge of the
(Company Name)
representations contained in this affidavit and am authorized to make these representations on behalf of _____ .
(Company Name)

4. I hereby certify that North American Refractories Company, 76 North Bridge Street, Gary, Indiana 46406, completed construction of the one (1) refractory brick grinder on _____ in conformity with the requirements and intent of the Construction Permit application received by the Office of Air Quality on April 25, 2003 and as permitted pursuant to **MSOP No. 089-12579, Plant ID No. 089-00163** issued on _____.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

_____
Signature

_____
Date

STATE OF INDIANA)
)SS
COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana on this _____ day of _____, 20 _____ .

My Commission expires: _____ .

_____

Signature

Name (typed or printed)

November 5, 2003

Indiana Department of Environmental Management
Office of Air Quality
and Gary Department of Environmental Affairs

Addendum to the
Technical Support Document for a Minor Source Operating Permit

Source Name:	**North American Refractories Company**
Source Location:	**76 North Bridge Street, Gary, Indiana 46406**
County:	**Lake**
Permit No.:	**MSOP 089-12579-00163**
SIC Code:	**3297**
Permit Reviewer:	**Edward A. Longenberger**

On September 25, 2003, the Office of Air Quality (OAQ) had a notice published in the Post-Tribune, Gary, Indiana, stating that North American Refractories Company had applied for a Minor Source Operating Permit to operate a refractory material manufacturing, repair and installation source with cartridge dust collectors as particulate control. The notice also stated that OAQ proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Upon further review, the OAQ has decided to make the following changes to the construction permit: The permit language is changed to read as follows (deleted language appears as ~~strikeouts~~, new language is **bolded)**:

Change 1:

Section A.2, items (a), (f) and (n) have had the following changes made to their descriptive information. Also, item (j) has been removed from the source, and the subsequent emission units have been relettered accordingly. These changes have also been made in the Facility Description box in Section D.1:

A.2 Emissions Units and Pollution Control Equipment Summary

This stationary source is approved to construct and operate the following emissions units and pollution control devices:

(a) One (1) natural gas-fired dry out assembly, **known as two (2) degasser units,** rated at 0.957 million British thermal units per hour**, total**.

(f) Three (3) ~~small~~ mixers, used to mix refractory castables, mortars and ramming mixes, consisting of:

(1) One (1) large mixer, capacity: 2000 pounds per batch and 42 tons per year.

(2) One (1) small paddle mixer, capacity: 165 pounds per batch and 21 tons per year.

(3) One (1) small paddle mixer, capacity: 110 pounds per batch and 21 tons per year.

~~(j) One (1) natural gas-fired oven, identified as Drying Oven #7, rated at 9.0 million British thermal units per hour.~~

(**j** ~~k~~) Three (3) natural gas-fired space heaters, identified as Spaceheaters #8, #9 and #10, rated at 2.5 million British thermal units per hour, each.

(**k** ~~l~~) One (1) mixing operation, identified as #19, used to make castable refractory material for use in lining of steel ladles, consisting of three (3) mixers, capacity: 4,000 pounds per batch, each, and with a total maximum annual castable throughput of 20,000 tons per year.

(**l** ~~m~~) One (1) mixer, identified as #22, used to make castable refractory material for casting of custom shapes, capacity: 4,000 pounds per batch, and a maximum annual castable throughput of 6,240 tons per year.

(**m** ~~n~~) One (1) refractory brick grinder, equipped with a **cartridge** ~~baghouse~~ dust collector for particulate control, exhausting to stack S05, capacity: 1,200 pounds of brick per hour.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description:

(a) One (1) natural gas-fired dry out assembly, **known as two (2) degasser units,** rated at 0.957 million British thermal units per hour**, total**.

(f) Three (3) ~~small~~ mixers, used to mix refractory castables, mortars and ramming mixes, consisting of:

(1) One (1) large mixer, capacity: 2000 pounds per batch and 42 tons per year.

(2) One (1) small paddle mixer, capacity: 165 pounds per batch and 21 tons per year.

(3) One (1) small paddle mixer, capacity: 110 pounds per batch and 21 tons per year.

~~(j) One (1) natural gas-fired oven, identified as Drying Oven #7, rated at 9.0 million British thermal units per hour.~~

(**j** ~~k~~) Three (3) natural gas-fired space heaters, identified as Spaceheaters #8, #9 and #10, rated at 2.5 million British thermal units per hour, each.

(**k** ~~l~~) One (1) mixing operation, identified as #19, used to make castable refractory material for use in lining of steel ladles, consisting of three (3) mixers, capacity: 4,000 pounds per batch, each, and with a total maximum annual castable throughput of 20,000 tons per year.

(**l** ~~m~~) One (1) mixer, identified as #22, used to make castable refractory material for casting of custom shapes, capacity: 4,000 pounds per batch, and a maximum annual castable throughput of 6,240 tons per year.

(**m** ~~n~~) One (1) refractory brick grinder, equipped with a **cartridge** ~~baghouse~~ dust collector for particulate control, exhausting to stack S05, capacity: 1,200 pounds of brick per hour.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Change 2:

The wording in Condition D.1.1 (b) has been changed to reflect the descriptive change noted above in Change 1. Paragraphs (b)(2) and (b)(3) have been revised to list the capacity of each small paddle mixer, in order to clarify which particulate limitation applies to which small paddle mixer:

D.1.1 Particulate [326 IAC 6-3-2(d)]

(b) Pursuant to 326 IAC 6-3-2(e), the particulate emissions from the three (3) ~~small~~ mixers, used to mix refractory castables, mortars and ramming mixes shall be limited to the following:

(1) The one (1) large mixer shall be limited to 13.6 pounds per hour when operating at a process weight rate of 6.0 tons per hour.

(2) The one (1) small paddle mixer**, with a capacity of 165 pounds per batch,** shall be limited to 4.07 pounds per hour when operating at a process weight rate of 0.99 tons per hour

(3) The one (1) small paddle mixer**, with a capacity of 110 pounds per batch,** shall be limited to 1.95 pounds per hour when operating at a process weight rate of 0.33 tons per hour.

Change 3:

The control device for the refractory brick grinder is more accurately described as a cartridge dust collector, rather than a baghouse. Therefore, Conditions D.1.6 through D.1.11 have had the following changes made to reflect the type of particulate control for the brick grinder:

D.1.6 Particulate Control

In order to comply with Condition D.1.1(c), the **cartridge dust collector** ~~baghouse~~ for particulate control shall be in operation and control emissions from the refractory brick grinder at all times that the refractory brick grinder is in operation.

Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.1.7 Visible Emissions Notations

(a) Visible emission notations of the refractory brick grinder **cartridge dust collector** ~~baghouse~~ stack exhaust (S05) shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation and Implementation shall be considered a violation of this permit.

D.1.8 Parametric Monitoring

The Permittee shall record the total static pressure drop across refractory brick grinder **cartridge dust collector** ~~baghouse~~, at least once per shift when the refractory brick grinder is in operation when venting to the atmosphere. When for any one reading, the pressure drop across the **cartridge dust collector** ~~baghouse~~ is outside the normal range of 2.0 and 8.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation and Implementation. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation and Implementation shall be considered a violation of this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.1.9 **Dust Collector** ~~Baghouse~~ Inspections

An inspection shall be performed each calendar quarter of all **cartridges** ~~bags~~ controlling the refractory brick grinding process. Inspections required by this condition shall not be performed in consecutive months. All **cartridges** ~~bags~~ shall be replaced.

D.1.10 Broken or Failed **Cartridge** ~~Bag~~ Detection

In the event that **cartridge** ~~bag~~ failure has been observed:

(a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section B- Emergency Provisions). Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation and Implementation, shall be considered a violation of this permit.

(b) For single compartment **dust collectors** ~~baghouses~~, if failure is indicated by a significant drop in the **dust collector's** ~~baghouse's~~ pressure readings with abnormal visible emissions or the failure is indicated by an opacity violation, or if **cartridge** ~~bag~~ failure is determined by other means, such as gas temperatures, flow rates, air infiltration, leaks, dust traces or triboflows, then failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.1.11 Record Keeping Requirements

(a) To document compliance with Condition D.1.7, the Permittee shall maintain records of visible emission notations of the refractory brick grinder **cartridge dust collector** ~~baghouse~~ stack exhaust once per shift.

November 5, 2003

Indiana Department of Environmental Management
Office of Air Quality
and the Gary Department of Environmental Affairs

Technical Support Document (TSD) for a Minor Source Operating Permit

Source Background and Description

Source Name:	**North American Refractories Company (NARCO)**
Source Location:	**76 North Bridge Street, Gary, Indiana 46406**
County:	**Lake**
SIC Code:	**3297**
Operation Permit No.:	**MSOP 089-12579-00163**
Permit Reviewer:	**Edward A. Longenberger**

The Office of Air Quality (OAQ) has reviewed a permit application from North American Refractories Company (NARCO) relating to the operation of a refractory material manufacturing, repair and installation source.

Permitted Emission Units and Pollution Control Equipment

There are no IDEM, OAQ permitted facilities operating at this source during this review process.

Unpermitted Emission Units and Pollution Control Equipment

The source also consists of the following unpermitted facilities/units:

(a) One (1) natural gas-fired dry out assembly, rated at 0.957 million British thermal units per hour.

(b) Steel fabrication and repair operations, consisting of stick welding, capacity: 7.21 pounds of welding rods/wire per hour.

(c) One (1) Safety Kleen cold cleaner degreaser, identified as Parts Washer, capacity: 20 gallons.

(d) One (1) storage tank, storing diesel fuel, capacity: 550 gallons.

(e) One (1) refractory brick sawing operation, with a maximum annual throughput of 65 tons of brick per year.

(f) Three (3) small mixers, used to mix refractory castables, mortars and ramming mixes, consisting of:

(1) One (1) large mixer, capacity: 2000 pounds per batch and 42 tons per year.

(2) One (1) small paddle mixer, capacity: 165 pounds per batch and 21 tons per year.

(3) One (1) small paddle mixer, capacity: 110 pounds per batch and 21 tons per year.

The following facilities/units have not received permits from IDEM, OAQ, but do have operating permits issued by the Gary Department of Environmental Affairs:

(g) Three (3) natural gas-fired combustion units, identified as Dryout Units #1, #2 and #3, rated at 12.0 million British thermal units per hour, each.

(h) One (1) natural gas-fired combustion unit, identified as Dryout Unit #5, rated at 6.0 million British thermal units per hour.

(i) One (1) natural gas-fired furnace, identified as Stress Relief Furnace #6, rated at 12.0 million British thermal units per hour.

(j) One (1) natural gas-fired oven, identified as Drying Oven #7, rated at 9.0 million British thermal units per hour.

(k) Three (3) natural gas-fired space heaters, identified as Spaceheaters #8, #9 and #10, rated at 2.5 million British thermal units per hour, each.

(l) One (1) mixing operation, identified as #19, used to make castable refractory material for use in lining of steel ladles, consisting of three (3) mixers, capacity: 4,000 pounds per batch, each, and with a total maximum annual castable throughput of 20,000 tons per year.

(m) One (1) mixer, identified as #22, used to make castable refractory material for casting of custom shapes, capacity: 4,000 pounds per batch, and a maximum annual castable throughput of 6,240 tons per year.

New Emission Units and Pollution Control Equipment

The application includes information relating to the construction and operation of the following equipment:

(n) One (1) refractory brick grinder, equipped with a baghouse dust collector for particulate control, exhausting to stack S05, capacity: 1,200 pounds of brick per hour.

Existing Approvals

The source has no previous approvals from the IDEM, OAQ. The source has been operating under the following permits issued by the Gary Department of Environmental Affairs:

3038, 3039, 3040, 3041, 3042, 3043, 3047, 3048, 3049, 3050, 3051, 3052, 3053 and 3420

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
V001	General ventilation	58.0	3.0	21,000	amb.
V002	General ventilation	58.0	3.0	21,000	amb.
V003	General ventilation	58.0	3.0	21,000	amb.
V004	General ventilation	58.0	3.0	21,000	amb.

S05	Brick Grinder	30.0	1.0	1,200	68.0

Enforcement Issue

(a) IDEM is aware that equipment has been constructed and/or operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled *Unpermitted Emission Units and Pollution Control Equipment.*

(b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Recommendation

The staff recommends to the Commissioner that the MSOP be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on August 4, 2000. Additional information was received on April 25, 2003, June 10, 2003, and August 22, 2003.

Emission Calculations

See pages 1 through 5 of 5 of Appendix A of this document for detailed emission calculations.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	**Potential To Emit** (tons/year)
PM	27.9
PM_{10}	6.61
SO_2	0.188
VOC	1.82
CO	26.3
NO_X	31.3

HAPs	Potential To Emit (tons/year)
Benzene	0.0007
Dichlorobenzene	0.0004
Formaldehyde	0.023
Hexane	0.563
Toluene	0.001
Lead Compounds	0.0002
Cadmium Compounds	0.0003
Chromium Compounds	5.58
Manganese Compounds	0.0001
Nickel Compounds	0.0007
TOTAL	6.17

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM and NO_X are each equal to or greater than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1.

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2001 OAQ emission data.

Pollutant	Actual Emissions (tons/year)
PM	not reported
PM_{10}	0
SO_2	0
VOC	0
CO	1
NO_X	1
HAP	not reported

County Attainment Status

The source is located in Lake County.

Pollutant	Status
PM_{10}	Moderate Nonattainment*

SO_2	Primary Nonattainment
NO_2	Attainment
Ozone	Severe Nonattainment
CO	Attainment
Lead	Attainment

* Lake County has been Federally re-designated in 40 CFR 81.315 as attainment for PM_{10}. The Indiana Air Pollution Control Board will be making the same designation in State rules.

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Lake County has been designated as severe nonattainment for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

(b) Lake County has been classified as attainment or unclassifiable for NO_2, CO and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) Lake County has been classified as nonattainment for PM_{10} and SO_2. Therefore, these emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

Source Status

New Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	**Emissions** (tons/year)
PM	2.11
PM_{10}	3.48
SO_2	0.188
VOC	1.82
CO	26.3
NO_X	31.3

(a) This existing source is not a major stationary source because:

(1) VOC is not emitted at a rate of twenty-five (25) tons per year or more,

(2) PM_{10} and SO_2 are not emitted at a rate of one hundred (100) tons per year or more, and

(3) No single HAP is emitted at a rate of ten (10) tons per year or more, and the combination of all HAPs emitted is not greater than twenty-five (25) tons per year.

(4) No attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the 28 listed source categories.

(b) These emissions are based upon emissions calculations submitted in the application for MSOP 089-12579-00163 and information submitted by the source in the Part 1 MACT Application.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) applicable to this proposed revision.

(b) The one (1) tank, with a capacity of 550 gallons, is not subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.110b, Subpart Kb), because the has a capacity less than forty (40) cubic meters.

(c) The one cold cleaner degreaser, identified as Parts Washer, is not subject to the requirements of 40 CFR 63, Subpart T, National Emission Standards for Halogenated Solvent Cleaning, because the source does not use any of the halogenated solvents listed in 40 CFR 63.460.

(d) The North American Refractories Company (NARCO) Gary plant is not subject to the requirements of 40 CFR Part 60, Subpart SSSSS, the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Refractory Products Manufacturing, because the source is not a major source of hazardous air pollutants (i.e., the source does not have the potential to emit 10 tons per year or greater of a single HAP or 25 tons per year or greater of a combination of HAPs). Sources covered under Subpart SSSSS normally emit HAPs from the firing of refractory bricks at temperatures in excess of 2000 degrees F. The NARCO source at 76 Bridge Street is an assembly plant which utilizes refractory bricks manufactured elsewhere. The dryers at the source operate at 300 degrees F, and do not release any HAPs other than from natural gas combustion.

(e) The source submitted a request for an applicability determination regarding the requirements of Section 112(j) of the Clean Air Act on May 17, 2002. IDEM has made a preliminary determination (RR 089-16367-00163) that the requirements of Section 112(j) of the Clean Air Act (40 CFR Part 63.50 through 63.56) are not applicable to this source because the source is not a major source of hazardous air pollutant (HAP) emissions (i.e., the source does not have the potential to emit 10 tons per year or greater of a single HAP or 25 tons per year or greater of a combination of HAPs).

State Rule Applicability - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

The unrestricted potential emissions of all criteria pollutants from this source are each less than 250 tons per year. Furthermore, this source is not one of the 28 listed source categories under 326 IAC 2-2. Therefore, the requirements of 326 IAC 2-2, Prevention of Significant Deterioration, are not applicable.

326 IAC 2-3 (Emission Offset)

This existing source is not subject to the requirements of 326 IAC 2-3 (Emission Offset) because:

(a) Uncontrolled potential emissions of VOC from this source are less than 25.0 tons per year, and

(b) Uncontrolled potential emissions of PM_{10} and SO_2 are each less than 100 tons per year.

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than ten (10) tons per year of NO_X in Lake County. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of twenty percent (20%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-1-11.1 (Lake County Fugitive Particulate Matter Control Requirements)

This source is not subject to the requirements of 326 IAC 6-1-11.1, because the potential to emit of fugitive particulate matter is less than five (5) tons per year.

State Rule Applicability - Individual Facilities

326 IAC 6-1 (Particulate Limitations)

Because source is located in Lake County, 326 IAC 6-1-2 (particulate limitations) could be applicable. However, because the source, including the proposed modification, has potential particulate matter emissions less than 100 tons per year, and actual particulate emissions less than 10 tons per year, 326 IAC 6-1-2 (particulate limitations) is not applicable. Actual emissions were determined from calculations submitted in this MSOP application.

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

Because the source, including the proposed modification, has potential particulate emissions less than 100 tons per year, and actual particulate emissions less than 10 tons per year, particulate emissions were evaluated according to 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes).

(a) Pursuant to 326 IAC 6-3-2(e), the particulate emissions from the three (3) mixers (EU #19), and the one (1) mixer (EU #22) shall be limited to 25.2 pounds per hour, each, when operating at a process weight rate of 15.0 tons per hour, each.

The potential particulate emissions before control from each of the four (4) mixers are:

(2.0 tons per batch) x (1 batch / 8 min) x (60 min/hr) x (0.3 pounds PM per ton) = 4.5 pounds of PM per hour. This is less than the allowable emission rate of 25.2 pounds per hour, therefore, each of the four (4) mixers are in compliance with this rule.

(b) Pursuant to 326 IAC 6-3-2(e), the particulate emissions from the three (3) small mixers, used to mix refractory castables, mortars and ramming mixes shall be limited to the following:

(1) The one (1) large mixer shall be limited to 13.6 pounds per hour when operating at a process weight rate of 6.0 tons per hour.

The potential particulate emissions before control from this mixer are:

(1.0 tons per batch) x (1 batch / 10 min) x (60 min/hr) x (0.3 pounds PM per ton) = 1.8 pounds of PM per hour. This is less than the allowable emission rate of 13.6 pounds per hour, therefore, this mixer is in compliance with this rule.

(2) The one (1) small paddle mixer shall be limited to 4.07 pounds per hour when operating at a process weight rate of 0.99 tons per hour

The potential particulate emissions before control from this mixer are:

(0.0825 tons per batch) x (1 batch / 5 min) x (60 min/hr) x (0.3 pounds PM per ton) = 0.297 pounds of PM per hour. This is less than the allowable emission rate of 4.07 pounds per hour, therefore, this mixer is in compliance with this rule.

(3) The one (1) small paddle mixer shall be limited to 1.95 pounds per hour when operating at a process weight rate of 0.33 tons per hour.

The potential particulate emissions before control from this mixer are:

(0.055 tons per batch) x (1 batch / 10 min) x (60 min/hr) x (0.3 pounds PM per ton) = 0.099 pounds of PM per hour. This is less than the allowable emission rate of 1.95 pounds per hour, therefore, this mixer is in compliance with this rule.

(c) Pursuant to 326 IAC 6-3-2(e), the particulate emissions from the refractory brick grinder shall be limited to 2.91 pounds per hour when operating at a process weight rate of 1,200 pounds per hour.

Emissions calculations based on AP-42, and shown in Appendix A of this document, indicate that uncontrolled emissions from the refractory brick grinder will be 5.10 pounds per hour. Therefore, this facility is not in compliance without controls. Since the potential to emit particulate matter after control by the baghouse dust collector is 0.005 pounds per hour, the refractory brick grinder will comply with this rule. The baghouse shall be in operation at all times the refractory brick grinder is in operation, in order to comply with this limit.

(d) The above pound per hour particulate limitations were calculated by use of the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10 P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

(e) Pursuant to 326 IAC 6-3-1(b)(9), the welding operations are not subject to the requirements of 326 IAC 6-3-2 because the welding operations consume less than 625 pounds of welding rods per day.

(f) Pursuant to 326 IAC 6-3-1(b)(14), the brick sawing operations are not subject to the requirements of 326 IAC 6-3-2 because the potential particulate emissions are less than 0.551 pounds per hour.

326 IAC 8-3-2 (Cold Cleaner Operations)

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for the one (1) degreaser, identified as Parts Washer, constructed after January 1, 1980, the Permittee shall:

(a) Equip the cleaner with a cover;

(b) Equip the cleaner with a facility for draining cleaned parts;

(c) Close the degreaser cover whenever parts are not being handled in the cleaner;

(d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(e) Provide a permanent, conspicuous label summarizing the operation requirements;

(f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control)

(a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), for cold cleaner degreaser operations without remote solvent reservoirs existing as of July 1, 1990, located in Clark, Elkhart, Floyd, Lake, Marion, Porter or St. Joseph Counties, the Permittee shall ensure that the following requirements are met:

(1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:

(A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38EC) (one hundred degrees Fahrenheit (100EF));

(B) The solvent is agitated; or

(C) The solvent is heated.

(2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees

Celsius (38EC) (one hundred degrees Fahrenheit (100EF)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

(3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).

(4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.

(5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38EC) (one hundred degrees Fahrenheit (100EF)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9EC) (one hundred twenty degrees Fahrenheit (120EF)):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.

(B) A water cover when solvent is used is insoluble in, and heavier than, water.

(C) Other systems of demonstrated equivalent control such as a refrigerated chiller of carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.

(b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaning facility construction of which commenced after July 1, 1990, shall ensure that the following operating requirements are met:

(1) Close the cover whenever articles are not being handled in the degreaser.

(2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.

(3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

326 IAC 8-3-8 (Material Requirements for Cold Cleaning Degreasers)

Pursuant to 326 IAC 8-3-8 (Material Requirements for Cold Cleaning Degreasers), for the one (1) cold cleaner degreaser, identified as Parts Washer, located in Lake County, the Permittee shall ensure that the following requirements are met:

(a) The Permittee shall not operate the cold cleaning degreaser with a solvent vapor pressure that exceeds one (1) millimeter of mercury (nineteen-thousandths (0.019) pound per square inch) measured at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

(b) The Permittee shall maintain each of the following records for each purchase:

(1) The name and address of the solvent supplier.

(2) The date of purchase.

(3) The type of solvent.

(4) The volume of each unit of solvent.

(5) The total volume of the solvent.

(6) The true vapor pressure of the solvent measured in millimeters of mercury at twenty (20) degrees Celsius (sixty-eight (68) degrees Fahrenheit).

All records shall be retained on-site for the most recent three (3) year period and shall be reasonably accessible for an additional two (2) year period.

Local Agency Requirements

This source is located in the city of Gary, which has its own local pollution control agency. IDEM, OAQ recommends that the Permittee contact the Gary Department of Environmental Affairs to determine if there are any additional local requirements that apply to this source:

Gary Department of Environmental Affairs
Suite 1012
504 North Broadway
Gary, Indiana 46402
Phone: (219) 882-3007
Fax: (219) 882-3012

Conclusion

The operation of this refractory manufacturing, repair and installation source shall be subject to the conditions of the attached proposed **MSOP 089-12579-00163**.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company North American Refractories Company
Address C 76 North Bridge Street, Gary, Indiana 46406
MSOP: 089-12579
Plt ID: 089-00163
Reviewer: Edward A. Longenberger
Date: August 4, 2000

Unit ID	Rating (mmBtu/hr)
#1, #2 and #	36.000
#5	6.000
#6	12.000
#7	9.000
#8, #9 and #	7.500
dry out	0.957
Total	**71.457**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
71.457	625.96

Pollutant

	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.90	7.60	0.600	100 **see below	5.50	84.0
Potential Emission in tons/yr	0.595	2.379	0.188	31.298	1.721	26.290

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
HAPs Emissions

Company North American Refractories Company
Address C 76 North Bridge Street, Gary, Indiana 46406
MSOP: 089-12579
Plt ID: 089-00163
Reviewer: Edward A. Longenberger
Date: August 4, 2000

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	0.002	0.001	0.075	1.80	0.003
Potential Emission in tons/yr	0.00066	0.000376	0.0235	0.563	0.00106

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel	Total HAPs
Emission Factor in lb/MMcf	0.0005	0.001	0.001	0.0004	0.002	
Potential Emission in tons/yr	0.000156	0.000344	0.000438	0.000119	0.00066	0.591

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Potential Emission Calculations

Company N North American Refractories Company
Address Cit 76 North Bridge Street, Gary, Indiana 46406
MSOP: 089-12579
Plt ID: 089-00163
Reviewer: Edward A. Longenberger
Date: August 4, 2000

Emission Unit **SCC# 3-05-007-12**
Castable Mixing for Ladle Casting #19

Pollutant	Maximum Castable Throughput (tons/yr)	Emission Factor (lbs/ton)	Uncontrolled Emission Rate (tons/yr)	Control Efficiency (%)	Controlled Emission Rate (tons/yr)
PM	20,000	0.300	3.000	80.00%	0.600
PM-10	20,000	0.150	1.500	80.00%	0.300

Emission Unit **Applicant Estimation**
Brick Sawing #20

Pollutant	Maximum Castable Throughput (tons/yr)	Emission Factor (lbs/ton)	Uncontrolled Emission Rate (tons/yr)	Control Efficiency (%)	Controlled Emission Rate (tons/yr)
PM	65.0	6.000	0.195	80.00%	0.039
PM-10	65.0	6.000	0.195	80.00%	0.039
Chromium	65.0	1.477	0.048	80.00%	0.010

Emission Unit **SCC# 3-05-007-12**
Castable Mixing for Custom Shape Casting #22

Pollutant	Maximum Castable Throughput (tons/yr)	Emission Factor (lbs/ton)	Uncontrolled Emission Rate (tons/yr)	Control Efficiency (%)	Controlled Emission Rate (tons/yr)
PM	6,240	0.300	0.936	80.00%	0.187
PM-10	6,240	0.150	0.468	80.00%	0.094

Emission Unit **SCC# 3-05-007-12**
Three (3) small mixers, used to mix refractory castables, mortars and ramming mixes

Pollutant	Maximum Castable Throughput (tons/yr)	Emission Factor (lbs/ton)	Uncontrolled Emission Rate (tons/yr)	Control Efficiency (%)	Controlled Emission Rate (tons/yr)
PM	84.0	0.300	0.013	80.00%	0.003
PM-10	84.0	0.150	0.006	80.00%	0.001

Emission Unit **SCC# 3-05-003-02**
Brick grinder

	Uncontroll	Uncontrolled		Controlled	Controlled

Pollutant	Maximum Throughput (tons/hr)	Emission Factor (lbs/ton)	Emission Rate (lbs/hr)	Emission Rate (tons/yr)	Control Efficiency (%)	Emission Rate (lbs/hr)	Emission Rate (tons/yr)
PM	0.603	8.500	5.124	22.444	99.9%	0.005	0.022
PM-10	0.603	0.530	0.320	1.399	99.9%	0.000	0.001
Chromium	0.603	2.093	1.262	5.527	99.9%	0.001	0.006

Summary of Potential Emissions

Emission Units	PM (tons/yr)	PM-10 (tons/yr)	SO2 (tons/yr)	NOx (tons/yr)	VOC (tons/yr)	CO (tons/yr)	Chromium (tons/yr)
#19	3.00	1.50	0.00	0.00	0.00	0.00	0.00
#20	0.195	0.195	0.00	0.00	0.00	0.00	0.048
#22	0.936	0.468	0.00	0.00	0.00	0.00	0.00
Three (3) small	0.013	0.006	0.00	0.00	0.00	0.00	0.00
Brick grinder	22.4	1.40	0.00	0.00	0.00	0.00	5.53
Total	**26.6**	**3.57**	**0.00**	**0.0**	**0.00**	**0.0**	**5.57**

METHODOLOGY

Uncontrolled Emission Rate (lbs/hr) = Throughput (tons/hr) x EF (lbs/ton)
Uncontrolled Emission Rate (tons/yr) = Throughput (tons/yr) x EF (lbs/ton) / 2000 (lbs/ton)
Controlled Emission Rate (lbs/hr) = Throughput (tons/hr) x EF (lbs/ton) x (1-Control Eff)
Controlled Emission Rate (tons/yr) = Throughput (tons/yr) x EF (lbs/ton) x (1-Control Eff) / 2000 (lbs/ton)
All emission factors taken from FIRES Version 6.23 unless otherwise noted.
Control Efficiencies for the mixers is based on an estimated 80% control due to the supersacks that act as hoods over the mixers
80% control is assumed for the brick sawing, since the process is a wet saw process
Chromium EF = Particulate EF x [36% Chromic Oxide (Cr_2O_3)] x [68.4% by weight of Chromic Oxide is Chromium]

Appendix A: State Potential Emissions Calc
Degreasing

Compar North American Refractories Co.
Address 76 North Bridge Street, Gary, Indiana 46406
MSOP: 089-12579
Plt ID: 089-00163
Reviewe Edward A. Longenberger
Date: August 4, 2000

Degreasing

Material	Density (lb/gal)	Weight % Volatile (H20 & Organ	Weight % Water	Weight % Organics	Gal of Mat (gal/day)	Potential VO (lb/day)	Potential VO (ton/yr)
Safety-Kleen	6.8	100.00%	0.0%	100.0%	0.082	0.562	0.103
State Potential Emissions						**0.562**	**0.103**

METHODOLOGY

Potential VOC Pounds per Day = Solvent Density (lbs/gallon) * weight % volatiles * solvent consumption (gallons/day)
Potential VOC Tons per Year = Potential VOC Pounds per Day * (365 days/yr) * (1 ton/2000 lbs)